IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1.-94. (Canceled)

95. (Currently Amended) A method to quantitate immunoglobulin steroid hormone response inhibitor in a sample comprising:

treating a sample to effectively remove steroid hormones from said sample;

conducting an immunoglobulin steroid hormone inhibition assay by adding the treated sample to a first group of steroid-hormone responsive tumor cells which have been transferred to serum-free media, said cells being from a cultured cell line selected from the group consisting of: T47D; MCF-7A; MCF-7K; ZR-75-1; MTW9/PL2; GH3; GH1; GH4C1; or T47D;

conducting an immunoglobulin steroid hormone inhibition positive control assay by adding a known ~~concentration~~ amount of plasma immunoglobulin selected from the group consisting of plasma IgA or plasma IgM to a second group of said selected steroid-hormone responsive tumor cells which have been transferred to serum-free media;

determining ~~the concentration~~ an amount of said added treated sample at which said treated sample inhibits steroid-hormone mediated cell growth in said inhibition assay; and

comparing said amount of said added treated sample ~~inhibition assay concentration~~ to said amount of plasma immunoglobulin added to said positive control assay to quantitate ~~the strength~~ an amount of immunoglobulin steroid hormone response inhibitor in said treated sample.

96. (Currently Amended) A method of detecting ~~a mediator of immunoglobulin~~ inhibition of steroid hormone responsive cell growth wherein the inhibition can be reversed by the steroid hormone, the method comprising:

obtaining at least two samples of identical mucosal epithelial cultured cells;

treating one of said cell samples with polymeric IgM;

leaving one of said cell samples untreated with no addition of polymeric IgM;

incubating said cell samples under cell growth promoting conditions;

measuring post-incubation, cell population[[s]] doublings in the cell samples; and

comparing the cell population[[s]] doublings of the cell samples wherein a lack of increase in the cell population doublings of the cell sample treated with polymeric IgM with respect to the untreated cell sample indicates that cell growth is inhibited by polymeric IgM ~~presence of the mediator of immunoglobulin inhibition of steroid hormone responsive cell growth~~.

97. (Currently Amended) A method of detecting ~~a mediator of immunoglobulin~~ inhibition of steroid hormone responsive cell growth wherein the inhibition can be reversed by the steroid hormone, the method comprising:

obtaining at least two samples of identical mucosal epithelial cultured cells;

treating one of said cell samples with plasma IgA;

leaving one of said cell samples untreated with no addition of plasma IgA;

incubating said cell samples under cell growth promoting conditions;

measuring post-incubation, cell population[[s]] doublings in the cell samples; and

comparing the cell population[[s]] doublings of the cell samples wherein a lack of increase in the cell population doublings of the cell sample treated with plasma IgA with respect to the untreated cell sample indicates that cell growth is inhibited by plasma IgA ~~presence of the mediator of immunoglobulin inhibition of steroid hormone responsive cell growth~~.

98. (Previously presented) A method to detect estrogenic activity of a substance of interest, the method comprising:

adding an inhibitory amount of IgM to at least two samples of a maintained steroid hormone-responsive cancer cell population in a nutrient medium;

adding an amount of the substance of interest to one of the cell samples to yield a test mixture;

designating the cell sample without any added substance of interest as a control mixture;

incubating the cell samples for a period of time under cell growth promoting conditions;

measuring the cell population in the cell samples after the period of time; and

comparing the test mixture cell population doublings with the control mixture cell population doublings, wherein a significant increase in cell population doublings in the test mixture compared with the control mixture indicates that the substance possesses estrogenic activity.

99. (Previously presented) A method to detect estrogenic activity of a substance of interest, the method comprising:

adding an inhibitory amount of IgA to at least two samples of a maintained steroid hormone-responsive cancer cell population in a nutrient medium;

adding an amount of the substance of interest to one of the cell samples to yield a test mixture;

designating the cell sample without any added substance of interest as a control mixture;

incubating the cell samples for a period of time under cell growth promoting conditions;

measuring the cell population in the cell samples after the period of time; and

comparing the test mixture cell population doublings with the control mixture cell population doublings, wherein a significant increase in cell population doublings in the test mixture compared with the control mixture indicates that the substance possesses estrogenic activity.

100. (Previously presented) A method to detect estrogenic activity of a substance of interest, the method comprising:

adding an inhibitory amount of IgM to at least three samples of a maintained steroid hormone-responsive cancer cell population in a nutrient medium;

adding an amount of the substance of interest to one of the cell samples to yield a test mixture;

adding an amount of estrogen to one of the cell samples to yield a standard mixture;

designating the cell sample without any added substance of interest as a control mixture;

incubating the cell samples for a period of time under cell growth promoting conditions;

measuring the cell population in the cell samples after the period of time; and

comparing the test mixture cell population doublings with the control mixture cell population doublings and comparing the standard mixture cell population doublings with the control mixture cell population doublings, wherein a significant increase in cell population doublings in the test mixture and the standard mixture compared with the control mixture indicates that the substance possesses estrogenic activity.

101. (Previously presented) A method to detect estrogenic activity of a substance of interest, the method comprising:

adding an inhibitory amount of IgA to at least three samples of a maintained steroid hormone-responsive cancer cell population in a nutrient medium;

adding an amount of the substance of interest to one of the cell samples to yield a test mixture;

adding an amount of estrogen to one of the cell samples to yield a positive control mixture;

designating the cell sample without said substance of interest or estrogen as a negative control mixture;

incubating the cell samples for a period of time under cell growth promoting conditions;

measuring the cell population in the cell samples after the period of time; and

comparing the test mixture cell population doublings with the negative control mixture cell population doublings and positive control mixture cell population doublings, wherein a significant increase in cell population doublings in the test mixture and the positive control mixture compared with the negative control mixture indicates that the substance possesses estrogenic activity.

102. (Previously presented) The method of claim 95 wherein said cells are further selected from the group of cell lines consisting of T47D, MCF-7A, MCF-7K or ZR-75-1.

103. (Previously presented) The method of claim 102 wherein said cells are from the T47D cell line.

104. (Previously presented) The method of claim 102 wherein said cells are from the ZR-75-1 cell line.

105. (Previously presented) The method of claim 102 wherein said cells are further selected from the group consisting of the MCF-7A and MCF-7K cell lines.

106. (Previously presented) The method of claim 95 wherein said cells are from the MTW9/PL2 cell line.

107. (Previously presented) The method of claim 95 wherein said cells are further selected from the group of cell lines consisting of GH1, GH3 and GH4C1.

108. (Previously presented) The method of claim 107 wherein said cells are from the GH4C1 cell line.

109. (Previously presented) The method of claim 95 wherein said cells are from the H-301 cell line.